

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE: DA VINCI SURGICAL ROBOT) Lead Case No.:
ANTITRUST LITIGATION,) 3:21-cv-03825-VC

-----)
THIS DOCUMENT RELATES TO:)
ALL CASES)
-----)

SURGICAL INSTRUMENT SERVICE)
COMPANY, INC.,) Case No.
) 3:21-cv-03496-VC

Plaintiff,)

vs.)

INTUITIVE SURGICAL, INC.,)

Defendant.)
-----)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

REMOTE PROCEEDINGS OF THE VIDEOTAPED DEPOSITION OF
INTUITIVE SURGICAL, INC.,
BY AND THROUGH ITS 30(B)(6) DESIGNEE,

GRANT DUQUE

TUESDAY, NOVEMBER 8, 2022

REPORTED BY NANCY J. MARTIN

CSR. NO. 9504, RMR, RPR

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Tuesday, November 8, 2022

- - -

Videotaped Remote Deposition of INTUITIVE
SURGICAL, INC., by and through its 30(B)(6) designee
GRANT DUQUE, beginning at 3:15 p.m., before Nancy J.
Martin, a Registered Merit Reporter, Certified
Shorthand Reporter. All parties appeared remotely.

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ALSO PRESENT:
BEN PELTA-HELLER, LEGAL VIDEOGRAPHER

1 actuated, it doesn't expose the red section.

2 And so when the system determines that an
3 instrument is at its end of life, it will actually
4 actuate that input disc and expose the red section of
5 that input disc which will then be visible on the side
6 of the instrument.

7 Q. And is that end-of-life indicator based on
8 engagements with the robot and an initial movement by
9 the surgeon? Is that how that's counted?

10 A. Can you ask that question one more time?

11 Q. Sure. The -- I'm wondering how a life is
12 counted for that end-of-life indicator. Is that
13 when a -- after engagement is attached to an arm and
14 the surgeon actually initiates a movement, is that
15 when a life is counted for purposes of that indicator?

16 A. For a procedure-type use counter --
17 use-count-type device, it's -- the time or the event
18 that defines when that use is to be counted is when it
19 goes into following.

20 Q. What is following?

21 A. Following is when the person at the surgeon's
22 console takes control of the instrument and puts it
23 into a master slave loop.

24 Q. And there are also I guess four other input
25 discs shown on the -- at least this instrument that

1 we're looking at on slide 19.

2 Do you see those?

3 A. Sorry. Can --

4 Q. Sure. On slide 19, are there four other
5 input discs in addition to the end-of-life indicator
6 input disc?

7 A. Yes, that's correct.

8 Q. And those are the input discs that engage via
9 a sterile adapter with a robot arm?

10 A. That's correct.

11 Q. And does the -- does the system or robot,
12 does it measure aspects of the -- what the motor is
13 doing when it's interacting with an input disc?

14 A. It controls the amount. So the system
15 controls the amount of torque that's being applied at
16 each input disc.

17 Q. Do you know if the system, for example, keeps
18 track of the amount of torque that it's applying to
19 the disc?

20 A. There's -- yeah. There's a record of how
21 much torque is being applied at each disc.

22 Q. So what sort of parameters like that are --
23 is a record kept of that interaction between a robot
24 motor and a corresponding disc give an instrument?

25 A. So we are monitoring torque. And really what

1 we're monitoring is how much current we're applying to
2 the motors, but we translate that to torque, the
3 displacement, so how much each of those input discs is
4 moving.

5 And that's done in concert with one another.
6 So we know at a particular time the torque and the
7 position of each of the discs at a moment in time. So
8 how they're coordinated in time.

9 Q. And is that information kept in a time series
10 of data?

11 A. That data is stored on the system logs.

12 Q. And so if you were to look at a system log,
13 would it be split up by -- per motor?

14 A. Can you elaborate on that question?

15 Q. Sure. Yeah. I'm trying to understand the
16 nature of the data that's stored from those
17 measurements that you were talking about, about torque
18 and position.

19 So one question is is the data associated
20 with a particular time as surgery progresses?

21 MS. CAHOY: Objection. Outside of the scope.

22 THE WITNESS: Can you ask the question one
23 more time? I'm sorry.

24 BY MR. VAN HOVEN:

25 Q. Sure. The -- we discussed the motors that

1 interface with the input discs of the instruments;
2 correct?

3 A. Correct.

4 Q. And that those motors -- essentially there's
5 current applied to them. And they also turn; right?

6 A. Correct.

7 Q. And that current can be used to drive torque;
8 right?

9 A. Correct.

10 Q. And the amount of turning can be used to
11 drive position?

12 A. Correct.

13 Q. And those are data points that are collected
14 during a procedure?

15 A. That's correct.

16 Q. And I'm wondering about the nature of those
17 data points that are collected. Are they collected
18 every second or every hundred milliseconds or
19 something like that?

20 MS. CAHOY: Objection to form. Outside the
21 scope.

22 THE WITNESS: I don't know the exact sampling
23 rate.

24 BY MR. VAN HOVEN:

25 Q. But there is a sampling rate?

1 A. Correct.

2 Q. And then samples are stored?

3 A. The data is stored on the system locally, but
4 there's a certain buffer. So if it's not downloaded,
5 then it will get overwritten.

6 Q. And in your role as -- in the design
7 engineering and product engineering roles at
8 Intuitive, do people ever look at that sample data
9 from the motors for any purposes?

10 A. Yes, we do.

11 Q. What are some of those purposes?

12 A. For failure analysis. So if we have an
13 RMA -- we talked about RMAs earlier -- and we're
14 trying to determine how an instrument failed or were
15 trying to replicate the point of failure, we might
16 access the GSP logs to see what position or what
17 torques are being applied to our best guess as what we
18 believe to be the point of failure to try to
19 replicate.

20 We might also access DSP logs to understand
21 the history of an instrument for FA purposes as well.

22 Q. What do you mean by "for FA purposes"?

23 A. For failure analysis. If we had -- if we had
24 an instrument that we were -- again, to try to
25 replicate the failure, not only to replicate the

1 failure but to replicate the history of the instrument
2 to understand, you know, how many times it was used at
3 a certain torque level, how much it spent its time at
4 the extremes of its range of motion, if there are any
5 outliers, just to try to characterize the history of a
6 device.

7 Q. Right. Because all of that information is
8 useful for determining how a failure happened; right?

9 MS. CAHOY: Objection to form.

10 BY MR. VAN HOVEN:

11 Q. I'm sorry. What was your answer?

12 A. It helps paint the picture to help do root
13 cause analysis. We try to understand as much as we
14 can.

15 Q. Is that data -- that data is stored at the
16 system with the XI; is that right?

17 A. So as I'm aware, it's stored locally on the
18 system and if it's not downloaded, it will get
19 overwritten because there's a certain memory buffer or
20 memory threshold that it can store.

21 Q. Do you have an understanding about how long
22 that period is at which it will get overwritten?

23 MS. CAHOY: Objection to form.

24 THE WITNESS: I don't know exactly.

25 BY MR. VAN HOVEN:

1 Q. Are there DSP logs with SI systems and
2 instruments?

3 MS. CAHOY: Objection to form. Outside the
4 scope.

5 THE WITNESS: I don't know offhand.

6 BY MR. VAN HOVEN:

7 Q. Is the -- to your knowledge, is the torque --
8 sorry. Let's go back to the SI for a moment. Is a --
9 are current imposition of motors that interface with
10 SI instruments measured by the SI system?

11 A. The amount of torque and the displacement
12 values are controlled by the system. So that
13 information is available, yes.

14 Q. I understand it's controlled by the system.
15 Is it also stored?

16 MS. CAHOY: Objection to form. Outside the
17 scope.

18 THE WITNESS: Again, there's a buffer. So
19 similar to what I understand on XI is that it is
20 stored locally and if it's not downloaded or saved,
21 then it would be overwritten and it would be lost. So
22 it's available but if not stored off the system, or it
23 will be erased.

24 BY MR. VAN HOVEN:

25 Q. Is the torque imposition data that's stored

1 with the XI system used to control the end-of-life
2 indicator in any manner?

3 MS. CAHOY: Objection to form.

4 THE WITNESS: Not that I'm aware.

5 BY MR. VAN HOVEN:

6 Q. Is the torque imposition data that's stored
7 within an SI system used to control the counter of
8 those instruments in any manner?

9 MS. CAHOY: Objection to form.

10 THE WITNESS: Not that I'm aware.

11 BY MR. VAN HOVEN:

12 Q. I'm going to move to slide 24, and I believe
13 I'm also displaying it.

14 Let me know when you're ready to discuss that
15 slide.

16 (The witness reviewed the document.)

17 THE WITNESS: Yes, I see it. RFID and
18 Dallas.

19 BY MR. VAN HOVEN:

20 Q. Is it your understanding that Dallas is a
21 chip that was used in SI instruments?

22 A. Yes.

23 Q. That's the chip that included the use counter
24 within SI instruments?

25 A. Can you restate the question?